

Application No. 10/008,473

Filed: 11/09/2001

Attorney Docket No.: CA920000040US1 (7161-193)

**REMARKS**

At the time of the Final Office Action dated August 5, 2005, claims 1-44 were pending and rejected. Claims 20-22 have been cancelled, and claim 23 has been amended to clarify that the invention recited in claim 23 is directed to a machine performing a method. Applicants respectfully submit that by the present Amendment and Remarks, this application is placed in clear condition for immediate allowance. At the least, the number of issues have been reduced, thereby placing this application in better condition for Appeal.<sup>1</sup> Accordingly, entry of the present Amendment and Remarks and favorable consideration are respectfully solicited.

If the Examiner refuses to enter the present Amendment, Applicants request that the Examiner check box 7(b) in form PTOL-303 (Advisory Action), which states that for purposes of Appeal, Applicants' proposed amendments will be entered since, as noted above, the present Amendment reduces the number of issues for Appeal.

**CLAIM 20 IS REJECTED UNDER THE FIRST PARAGRAPH OF 35 U.S.C. § 112**

On page 3 of the Office Action, the Examiner asserted that claim 20 contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to make and/or use the invention. Although Applicants disagree with the

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<sup>1</sup> See M.P.E.P. § 706.07(e) ("An amendment that will place the application ... in better form for appeal may be admitted.").

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Examiner's conclusion, claim 20 has been cancelled; and thus, the rejection of claim 20 under the first paragraph of 35 U.S.C. § 112 is moot.

**CLAIMS 21 AND 22 ARE REJECTED UNDER THE SECOND PARAGRAPH OF 35**

**U.S.C. § 112**

On page 3 of the Office Action, the Examiner asserted that claims 21 and 22 are indefinite for failing to particular point out and distinctly claim the subject matter which Applicants regards as the invention. Although Applicants disagree with the Examiner's conclusion, claims 21 and 22 have been cancelled; and thus, the rejection of claims 21 and 22 under the second paragraph of 35 U.S.C. § 112 is moot.

**CLAIMS 23-44 ARE REJECTED UNDER THE SECOND PARAGRAPH OF 35 U.S.C. §**

**112**

Regarding the Examiner's assertion that "it is unclear what the components of the recited 'machine' are," Applicants note that claims 23-44 recite a "machine for computing" (emphasis added). Applicants position is that one having ordinary skill in the art would have no difficulty understanding the scope of the phrase "machine for computing," particularly when reasonably interpreted in light of the written description of the specification.<sup>2</sup>

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<sup>2</sup> In re Okuzawa, 537 F.2d 545, 190 USPQ 464 (CCPA 1976); In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974).

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Claim 23 has been amended to clarify that the claimed invention is directed to a machine performing a method.

As to the Examiner's assertion that "the steps" lacks antecedent basis, Applicants respectfully submit that the use of the phrase "the steps comprising" in a preamble of a claim is ubiquitous, and one having ordinary skill in the art would not consider that phrase to be indefinite within the meaning of 35 U.S.C. § 112.

**CLAIMS 1-44 ARE REJECTED UNDER 35 U.S.C. § 101**

On pages 2-3 of the Office Action, the Examiner asserted that the claimed invention, as recited in claims 1-44, is directed to non-statutory subject matter. This rejection is respectfully traversed.

Prior to addressing the substance of the Examiner's rejection under 35 U.S.C. § 101, Applicants note that a precedential opinion has been issued by the Board of Patent Appeals and Interferences (hereinafter the Board) subsequent to the issuance of the Final Office Action, addressing issues associated with 35 U.S.C. § 101. In Ex parte Lundgren<sup>3</sup>, the Board stated that "there is no judicially recognized separate 'technological arts' test to determine patent eligible subject matter under § 101."

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<sup>3</sup> Appeal No. 2003-2088.

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The Examiner has alleged that the claimed invention, as recited in claims 1-44 "cite mere mathematical equations with indefinite post-solution activity or results." The Examiner also cited M.P.E.P. § 2106(IV)(B)(1) for support. This particular section of the M.P.E.P. relied upon In re Shrader<sup>4</sup> for support of the notion that "a process consisting solely of mathematical operations, i.e., converting one set of numbers into another set of numbers, does not manipulate appropriate subject matter and thus cannot constitute a statutory process."

*In re Shrader improperly relied upon*

Notwithstanding the Patent Office's reliance upon In re Shrader in the M.P.E.P., both the Patent Office and the Federal Circuit recognizes that the court in In re Shrader did not apply a proper analysis. As stated in M.P.E.P. § 2106(I), "[o]ffice personnel should no longer rely on the Freeman-Walter-Abele test to determine whether a claimed invention is directed to statutory subject matter." The court in In re Shrader, however, relied on the Freeman-Walter-Abele test. The failure of the court in In re Shrader to rely upon a proper standard is discussed in AT&T Corp. v. Excel Communications, Inc.,<sup>5</sup> which states:

Similarly, the court in In re Schrader relied upon the Freeman - Walter - Abele test for its analysis of the method claim involved. The court found neither a physical transformation nor any physical step in the claimed process aside from the entering of data into a record. See 22 F.3d at 294, 30 USPQ2d at 1458. The Schrader court likened the data-recording step to that of data-gathering and held that the claim was properly rejected as failing to define patentable subject matter. See id. at 294, 296, 30 USPQ2d at 1458-59. The focus of the court in Schrader was not on whether the mathematical algorithm was applied in a practical manner since it ended its inquiry before looking to see if a useful, concrete,

<sup>4</sup> 22 F.3d 290, 30 USPQ2d 1455 (Fed. Cir. 1994).

<sup>5</sup> 172 F.3d 1352, 50 USPQ2d 1447 (Fed. Cir. 1999).

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tangible result ensued. Thus, in light of our recent understanding of the issue, the Schrader court's analysis is as unhelpful as that of In re Grams.

Therefore, the Examiner cannot properly rely upon In re Schrader to support the rejection of claims 1-44 under 35 U.S.C. § 101.

An algorithm is patentable when applied in "useful" way

In State Street Bank and Trust Company v. Signature Financial Group, Inc.,<sup>6</sup> the court elaborated on the mathematical algorithm exception to patentable subject matter by stating:

Unpatentable mathematical algorithms are identifiable by showing they are merely abstract ideas constituting disembodied concepts or truths that are not "useful." From a practical standpoint, this means that to be patentable an algorithm must be applied in a "useful" way.

The court in State Street then set forth the criteria for establishing statutory subject matter under 35 U.S.C. § 101 as follows:

The question of whether a claim encompasses statutory subject matter should not focus on which of the four categories of subject matter a claim is directed to — process, machine, manufacture, or composition of matter—but rather on the essential characteristics of the subject matter, in particular, its practical utility. Section 101 specifies that statutory subject matter must also satisfy the other "conditions and requirements" of Title 35, including novelty, nonobviousness, and adequacy of disclosure and notice. See In re Warmerdam, 33 F.3d 1354, 1359, 31 USPQ2d 1754, 1757-58 (Fed. Cir. 1994). For purpose of our analysis, as noted above, claim 1 is directed to a machine programmed with the Hub and Spoke software and admittedly produces a "useful, concrete, and tangible result." Alappat, 33 F.3d at 1544, 31 USPQ2d at 1557. This renders it statutory subject matter, even if the useful result is expressed in numbers, such as price, profit, percentage, cost, or loss.

Thus, as articulated above, the test for determining whether subject matter is patentable under 35 U.S.C. § 101 involves deciding if the subject matter produces a

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<sup>6</sup> 149 F.3d 1368, 47 USPQ2d 1596 (Fed Cir. 1998).

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"useful, concrete, and tangible result." Furthermore, the law states that this result can be "expressed in numbers."

Applicants have established utility

A discussion of the procedural considerations regarding a rejection based upon lack of utility (i.e., 35 U.S.C. § 101) is found in M.P.E.P. § 2107.02. Specifically, M.P.E.P. § 2107.02(I) states that:

regardless of the category of invention that is claimed (e.g., product or process), an applicant need only make one credible assertion of specific utility for the claimed invention to satisfy 35 U.S.C. 101 and 35 U.S.C. 112

In the paragraph spanning pages 1 and 2 of the disclosure and within the "Background of the Present Invention" section, Applicants stated the following:

Steps for computing binary representations of numbers can create an unacceptably large deviation between an computer binary representation and its theoretical numerical value due to successive rounding errors. This can be an intolerable situation when a higher degree of accuracy is required. Various methods can improve computation accuracy but they may require a significant increase in processing time and/or hardware.

As recognized by those skilled in the art a floating-point number is a digital representation of an arbitrary real number in a computer. As alluded to by Applicants in the above-reproduced passage, rounding errors<sup>7</sup> with floating point numbers can degrade computation accuracy. In the second full paragraph on page 16 of the disclosure, Applicants stated with regard to the invention the following:

Optionally, accuracy can be further improved by choosing  $x_i$  such that  $p(x_i)$  has extra accuracy beyond the precision of the floating-point number system of the computer.

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<sup>7</sup> E.g.,  $2/3$  is not perfectly represented by .66666667.

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Applicants, therefore, have asserted a credible utility (i.e., improving the precision of a floating-point number system in a computer).

As noted in M.P.E.P. § 2107.02(III)(A), the Court of Customs and Patent Appeals in In re Langer<sup>8</sup> stated the following:

As a matter of Patent Office practice, a specification which contains a disclosure of utility which corresponds in scope to the subject matter sought to be patented must be taken as sufficient to satisfy the utility requirement of § 101 for the entire claimed subject matter unless there is a reason for one skilled in the art to question the objective truth of the statement of utility or its scope. (emphasis in original)

Since a credible utility is contained in Applicants' specification, the utility requirement of 35 U.S.C. § 101 (i.e., whether the invention produces a useful, concrete, and tangible result) has been met. Therefore, Applicants respectfully solicit withdrawal of the imposed rejection of claims 1-44 under 35 U.S.C. § 101.

**CLAIM 20 IS REJECTED UNDER THE FIRST PARAGRAPH OF 35 U.S.C. § 112**

On page 3 of the Office Action, the Examiner asserted that the claimed invention, as recited in claim 20, is directed to non-statutory subject matter. Although Applicants disagree with the Examiner's conclusion, claim 20 has been cancelled; and thus, the rejection of claim 20 under the first paragraph of 35 U.S.C. § 112 is moot.

Applicants have made every effort to present claims which distinguish over the prior art, and it is believed that all claims are in condition for allowance. However, Applicants invite the Examiner to call the undersigned if it is believed that a telephonic

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<sup>8</sup> 503 F.2d 1380, USPQ 288 (CCPA 1974).

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interview would expedite the prosecution of the application to an allowance.

Accordingly, and in view of the foregoing remarks, Applicants hereby respectfully request reconsideration and prompt allowance of the pending claims.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 09-0461, and please credit any excess fees to such deposit account.

Date: October 20, 2005

Respectfully submitted,



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